

Mohammad Hossein Ahmadi

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Associate Professor at the Shahrood
University of Technology

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EDUCATION:

University of Tehran, Tehran
Ph.D of Energy System Engineering

K.N.Toosi University of Technology, Tehran
MSc in Energy System Engineering

Chabahar Maritime and Marine University
Bachelor of Science (BS)
Naval architecture

ACTIVITIES:

Sustainable Energy, Renewable Energy, CO₂ Capture, Energy efficiency, Nano/Micro scale Thermodynamics, Pinch Technology, Process Integration Modelling and Optimization, Desalination, Energy Audit, Optimization, Artificial Intelligence.

TEACHING ACTIVITIES:

Undergraduate teaching:

1. Thermodynamics
2. Heat Transfer I,II
3. Engineering mathematics
4. Numerical calculations
5. Programming

Postgraduate teaching

1. Pinch Technology
2. Exergy Analysis
3. Solar Power plans

AWARD AND HONORS:

1. Top **1%** of World's Scientists (2017-2020)
2. First Rank of Ph.D program in Energy System Engineering
3. Forth Rank student at MS.c program of Energy System Engineering

4. Engineering Faculty of University of Tehran Distinguished researcher award, 2015-2016.
5. Outstanding oral presentation, ISME2013 Held in Tehran

Editorial Board:

1. Member of Editorial Board (**IET Renewable Power Generation, IF= 3.605 (ISI)**)
2. Member of Editorial Board (**Journal of Power and Energy, Part A of the Proceedings of the Institution of Mechanical Engineers , IF=1.694 (ISI)**)
3. Member of Editorial Board (**World Journal of Engineering (ISI)**)
4. Member of Editorial Board (**International Journal of Renewable Energy Development (ISI)**)
5. Member of Editorial Board (**International Journal of Energy Economics and Policy (Scopus)**)
6. Member of Editorial Board (**International Journal of Energy Technology and Policy (Scopus)**)
7. Member of Editorial Board (**Mathematical Modelling of Engineering Problems (Scopus)**)
8. Member of Editorial Board (**Technological Audit and Production Reserves**)
9. Member of Editorial Board (**Current Alternative Energy**)
10. Member of Editorial Board (**International Journal of Hydromechanics**)
11. Guest Editor of Journal of Thermal Analysis and Calorimetry (SI: **Exergetic Dimensions of Energy Systems and Processes**) Q2
12. Guest Editor of Applied Sciences (SI: **Application of Machine Learning, Artificial Intelligence, Deep Learning and Big Data Analysis in Nanofluids and Nanoparticles Design**) Q2
13. Guest Editor of Sustainability (SI: **Applications of Artificial Intelligence Model of Heat and Mass Transfer**) Q2
14. Guest Editor of Mathematical Problems in Engineering (SI: **Modelling, Optimisation, and Control of Medium and Low-temperature Thermal Energy Systems Based on the Organic Rankine Cycle**) Q3
15. Member of SSME2015 Technical Program Committee
16. Member of Nano-Micro Conference 2017 Technical Program Committee

Scopus ID: 55016898100, **h-index: 49**

Active reviewer

- Journal of Thermal Analysis and Calorimetry
- Applied Thermal Engineering Journal.
- Energy Journal.
- Energy Conversion and Management.
- International Journal of Energy Research (IJER).
- Neural Computing and Applications Journal
- Renewable Energy
- Journal of Renewable and Sustainable Energy
- Ambient Energy
- International Journal of Hydrogen Energy
- Applied Energy - Journal
- Renewable & Sustainable Energy Reviews
- Environmental Progress & Sustainable Energy
- Biomass & Bioenergy
- Applied Soft Computing - Journal

PUBLICATION:

Book Chapter

Ahmadi M.H., Dehghani S., Mohammadi A.H., Feidt M., Multi-objective optimization of a Stirling engine with irreversibility consideration using Finite speed thermodynamics. *Advances in Energy Research* (Volume 18), 01/2014; Nova Science Publishers, Inc., NY, USA.

Selected ISI International Journals

- Beigzadeh, Milad, Fathollah Pourfayaz, Mahyar Ghazvini, and **Mohammad H. Ahmadi**. "Energy and exergy analyses of solid oxide fuel cell-gas turbine hybrid systems fed by different renewable biofuels: A comparative study." *Journal of Cleaner Production* 280 (2021): 124383.

- Jagtap, Hanumant P., Anand K. Bewoor, Ravinder Kumar, **Mohammad Hossein Ahmadi**, Mamdouh El Haj Assad, and Mohsen Sharifpur. "RAM analysis and availability optimization of thermal power plant water circulation system using PSO." *Energy Reports* (2020).
- Jagtap, Hanumant P., Anand K. Bewoor, Ravinder Kumar, **Mohammad Hossein Ahmadi**, and Lingen Chen. "Performance analysis and availability optimization to improve maintenance schedule for the turbo-generator subsystem of a thermal power plant using particle swarm optimization." *Reliability Engineering & System Safety* 204 (2020): 107130.
- Zolfagharnasab, Mohammad Hossein, Cyrus Aghanajafi, Soheil Kaviani, Niloufar Heydarian, and **Mohammad Hossein Ahmadi**. "Novel analysis of second law and irreversibility for a solar power plant using heliostat field and molten salt." *Energy Science & Engineering* 8, no. 11 (2020): 4136-4153.
- Rahmati, A., S. M. Varedi-Koulaei, **M. H. Ahmadi**, and H. Ahmadi. "Dimensional synthesis of the Stirling engine based on optimizing the output work by evolutionary algorithms." *Energy Reports* 6 (2020): 1468-1486.
- Jagtap, Hanumant, Anand Bewoor, Ravinder Kumar, **Mohammad Hossein Ahmadi**, and Giulio Lorenzini. "Markov-based performance evaluation and availability optimization of the boiler–furnace system in coal-fired thermal power plant using PSO." *Energy Reports* 6 (2020): 1124-1134.
- Vakilabadi, M. Akbari, M. Bidi, A. F. Najafi, and **Mohammad Hossein Ahmadi**. "Energy, Exergy analysis and performance evaluation of a vacuum evaporator for solar thermal power plant Zero Liquid Discharge Systems." *Journal of Thermal Analysis and Calorimetry* 139, no. 2 (2020): 1275-1290.
- Abdollahpour, Amir, Roghayeh Ghasempour, Alibakhsh Kasaeian, and **Mohammad H. Ahmadi**. "Exergoeconomic analysis and optimization of a transcritical CO₂ power cycle driven by solar energy based on nanofluid with liquefied natural gas as its heat sink." *Journal of Thermal Analysis and Calorimetry* 139, no. 1 (2020): 451-473.
- Açikkalp, Emin, and **Mohammad H. Ahmadi**. "Performance Evaluation of PEM Fuel Cell-Chemical Heat Pump-Absorption Refrigerator Hybrid System." *International Journal of Ambient Energy* just-accepted (2020): 1-30.

- Ez Abadi, Ali Mohammad, Meisam Sadi, Mahmood Farzaneh-Gord, **Mohammad Hossein Ahmadi**, Ravinder Kumar, and Kwok-wing Chau. "A numerical and experimental study on the energy efficiency of a regenerative Heat and Mass Exchanger utilizing the counter-flow Maisotsenko cycle." *Engineering Applications of Computational Fluid Mechanics* 14, no. 1 (2020): 1-12.
- Sharma, Jeet Prakash, Aashish Sharma, Ravindra D. Jilte, Ravinder Kumar, and **Mohammad Hossein Ahmadi**. "A study on thermohydraulic characteristics of fluid flow through microchannels." *Journal of Thermal Analysis and Calorimetry* 140, no. 1 (2020): 1-32.
- **Ahmadi, Mohammad Hossein**, Alireza Baghban, Milad Sadeghzadeh, Masoud Hadipoor, and Mahyar Ghazvini. "Evolving connectionist approaches to compute thermal conductivity of TiO₂/water nanofluid." *Physica A: Statistical Mechanics and its Applications* 540 (2020): 122489.
- Aghayari, Reza, Heydar Maddah, Seyed Mohsen Pourkiaei, **Mohammad Hossein Ahmadi**, Lingen Chen, and Mahyar Ghazvini. "Theoretical and experimental studies of heat transfer in a double-pipe heat exchanger equipped with twisted tape and nanofluid." *The European Physical Journal Plus* 135, no. 2 (2020): 1-26.
- Nasirzadehroshenin, Fatemeh, Milad Sadeghzadeh, Amirhossein Khadang, Heydar Maddah, **Mohammad Hossein Ahmadi**, Hossein Sakhaeinia, and Lingen Chen. "Modeling of heat transfer performance of carbon nanotube nanofluid in a tube with fixed wall temperature by using ANN–GA." *The European Physical Journal Plus* 135, no. 2 (2020): 1-20.
- **Ahmadi, Mohammad Hossein**, Behnam Mohseni-Gharyehsafa, Mahyar Ghazvini, Marjan Goodarzi, Ravindra D. Jilte, and Ravinder Kumar. "Comparing various machine learning approaches in modeling the dynamic viscosity of CuO/water nanofluid." *Journal of Thermal Analysis and Calorimetry* 139, no. 4 (2020): 2585-2599.
- **Ahmadi, Mohammad Hossein**, Alireza Baghban, Mahyar Ghazvini, Masoud Hadipoor, Roghayeh Ghasempour, and Mohammad Reza Nazemzadegan. "An insight into the prediction of TiO₂/water nanofluid viscosity through intelligence schemes." *Journal of Thermal Analysis and Calorimetry* 139, no. 3 (2020): 2381-2394.

- **Ahmadi, Mohammad Hossein**, Mahyar Ghazvini, Heydar Maddah, Mostafa Kahani, Samira Pourfarhang, Amin Pourfarhang, and Saeed Zeinali Heris. "Prediction of the pressure drop for CuO/(Ethylene glycol-water) nanofluid flows in the car radiator by means of Artificial Neural Networks analysis integrated with genetic algorithm." *Physica A: Statistical Mechanics and its Applications* (2020): 124008.
- Açıkkalp, Emin, Süheyla Yerel Kandemir, and **Mohammad H. Ahmadi**. "Performance Evaluation of the Thermophotovoltaic-Driven Thermoionic Refrigerator." *Journal of Energy Resources Technology* 142, no. 3 (2020).
- Farzaneh-Gord, Mahmood, Behnam Mohseni-Gharyehsafa, Ahmad Arabkoohsar, **Mohammad Hossein Ahmadi**, and Mikhail A. Sheremet. "Precise prediction of biogas thermodynamic properties by using ANN algorithm." *Renewable Energy* 147 (2020): 179-191.
- Jilte, R. D., Ravinder Kumar, and **Mohammad H. Ahmadi**. "Cooling performance of nanofluid submerged vs. nanofluid circulated battery thermal management systems." *Journal of Cleaner Production* 240 (2019): 118131.
- Nikzad, Amirhossein, Mahmood Chahartaghi, and **Mohammad Hossein Ahmadi**. "Technical, economic, and environmental modeling of solar water pump for irrigation of rice in Mazandaran province in Iran: A case study." *Journal of Cleaner Production* 239 (2019): 118007.
- Mirzaee, Mojtaba, Reza Zare, Milad Sadeghzadeh, Heydar Maddah, **Mohammad Hossein Ahmadi**, Emin Acıkkalp, and Lingen Chen. "Thermodynamic analyses of different scenarios in a CCHP system with micro turbine–Absorption chiller, and heat exchanger." *Energy Conversion and Management* 198 (2019): 111919.
- **Ahmadi, Mohammad Hossein**, Mahyar Ghazvini, Milad Sadeghzadeh, Mohammad Alhuyi Nazari, and Mohammad Ghalandari. "Utilization of hybrid nanofluids in solar energy applications: A review." *Nano-Structures & Nano-Objects* 20 (2019): 100386.
- Ramezanizadeh, Mahdi, **Mohammad Hossein Ahmadi**, Mohammad Alhuyi Nazari, Milad Sadeghzadeh, and Lingen Chen. "A review on the utilized machine learning approaches for modeling the dynamic viscosity of nanofluids." *Renewable and Sustainable Energy Reviews* 114 (2019): 109345.

- Shahdost, Bagher Mokhtari, Mohammad Ali Jokar, Fatemeh Razi Astaraei, and **Mohammad Hossein Ahmadi**. "Modeling and economic analysis of a parabolic trough solar collector used in order to preheat the process fluid of furnaces in a refinery (case study: Parsian Gas Refinery)." *Journal of Thermal Analysis and Calorimetry* 137, no. 6 (2019): 2081-2097.
- Maddah, Heydar, Mahyar Ghazvini, and **Mohammad Hossein Ahmadi**. "Predicting the efficiency of CuO/water nanofluid in heat pipe heat exchanger using neural network." *International Communications in Heat and Mass Transfer* 104 (2019): 33-40.
- **Ahmadi, Mohammad H.**, Mahyar Ghazvini, Mohammad Alhuyi Nazari, Mohammad Ali Ahmadi, Fathollah Pourfayaz, Giulio Lorenzini, and Tingzhen Ming. "Renewable energy harvesting with the application of nanotechnology: A review." *International Journal of Energy Research* 43, no. 4 (2019): 1387-1410.
- Dehghani Madvar, Mohammad, Alireza Aslani, **Mohammad Hossein Ahmadi**, and Narjes Sadat Karbalaie Ghomi. "Current status and future forecasting of biofuels technology development." *International Journal of Energy Research* 43, no. 3 (2019): 1142-1160.
- **Ahmadi, Mohammad Hossein**, Ali Ghahremannezhad, Kwok-Wing Chau, Parinaz Seifaddini, Mohammad Ramezannezhad, and Roghayeh Ghasempour. "Development of Simple-to-Use Predictive Models to Determine Thermal Properties of Fe₂O₃/Water-Ethylene Glycol Nanofluid." *Computation* 7, no. 1 (2019): 18.
- Naeimi, Abbas, Mokhtar Bidi, **Mohammad Hossein Ahmadi**, Ravinder Kumar, Milad Sadeghzadeh, and Mohammad Alhuyi Nazari. "Design and exergy analysis of waste heat recovery system and gas engine for power generation in Tehran cement factory." *Thermal Science and Engineering Progress* 9 (2019): 299-307.
- Kumar, Ravinder, Ravindra Jilte, **Mohammad H. Ahmadi**, and Rajneesh Kaushal. "A simulation model for thermal performance prediction of a coal-fired power plant." *International Journal of Low-Carbon Technologies* (2019).
- Chahartaghi, Mahmood, Mohammad Kalami, **Mohammad Hossein Ahmadi**, Ravinder Kumar, and Ravindra Jilte. "Energy and exergy analyses and thermo-economic optimization of geothermal heat pump for domestic water heating." *International Journal of Low-Carbon Technologies* (2019).

- Wakilabadi, M. Akbari, Mokhtar Bidi, A. F. Najafi, and **Mohammad H. Ahmadi**. "Exergy analysis of a hybrid solar-fossil fuel power plant." *Energy Science & Engineering* 7, no. 1 (2019): 146-161.
- Shams Ghoreishi, Seyed Milad, Moslem Akbari Wakilabadi, Mokhtar Bidi, Alireza Khoeini Poorfar, Milad Sadeghzadeh, **Mohammad Hossein Ahmadi**, and Tingzhen Ming. "Analysis, economical and technical enhancement of an organic Rankine cycle recovering waste heat from an exhaust gas stream." *Energy Science & Engineering* 7, no. 1 (2019): 230-254.
- Açıkkalp, Emin, Süheyla Yerel Kandemir, and **Mohammad H. Ahmadi**. "Solar driven Stirling engine-chemical heat pump-absorption refrigerator hybrid system as environmental friendly energy system." *Journal of environmental management* 232 (2019): 455-461.
- Baghban, Alireza, Mostafa Kahani, Mohammad Alhuyi Nazari, **Mohammad Hossein Ahmadi**, and Wei-Mon Yan. "Sensitivity analysis and application of machine learning methods to predict the heat transfer performance of CNT/water nanofluid flows through coils." *International Journal of Heat and Mass Transfer* 128 (2019): 825-835.
- Ramezanizadeh, Mahdi, Mohammad Alhuyi Nazari, **Mohammad Hossein Ahmadi**, and Kwok-wing Chau. "Experimental and numerical analysis of a nanofluidic thermosyphon heat exchanger." *Engineering Applications of Computational Fluid Mechanics* 13, no. 1 (2019): 40-47.
- **Ahmadi, Mohammad H.**, Mohammad Alhuyi Nazari, Milad Sadeghzadeh, Fathollah Pourfayaz, Mahyar Ghazvini, Tingzhen Ming, Josua P. Meyer, and Mohsen Sharifpur. "Thermodynamic and economic analysis of performance evaluation of all the thermal power plants: A review." *Energy Science & Engineering* 7, no. 1 (2019): 30-65.
- **Ahmadi, Mohammad Hossein**, Milad Sadeghzadeh, Amir Hossein Raffiee, and Kwok-wing Chau. "Applying GMDH neural network to estimate the thermal resistance and thermal conductivity of pulsating heat pipes." *Engineering Applications of Computational Fluid Mechanics* 13, no. 1 (2019): 327-336.
- Maddah, Heydar, Reza Aghayari, **Mohammad Hossein Ahmadi**, Mohammad Rahimzadeh, and Nahid Ghasemi. "Prediction and modeling of MWCNT/Carbon (60/40)/SAE 10 W 40/SAE 85 W 90 (50/50) nanofluid viscosity using artificial

neural network (ANN) and self-organizing map (SOM)." *Journal of Thermal Analysis and Calorimetry* 134, no. 3 (2018): 2275-2286.

- Açıkkalp, Emin, and **Mohammad H. Ahmadi**. "Parametric investigation of phosphoric acid fuel cell-Thermally regenerative electro chemical hybrid system." *Journal of Cleaner Production* 203 (2018): 585-600.
- **Ahmadi, Mohammad Hossein**, Mahyar Ghazvini, Milad Sadeghzadeh, Mohammad Alhuyi Nazari, Ravinder Kumar, Abbas Naeimi, and Tingzhen Ming. "Solar power technology for electricity generation: A critical review." *Energy Science & Engineering* 6, no. 5 (2018): 340-361.
- Mohammadi, Amin, Milad Ashouri, **Mohammad Hossein Ahmadi**, Mokhtar Bidi, Milad Sadeghzadeh, and Tingzhen Ming. "Thermoeconomic analysis and multiobjective optimization of a combined gas turbine, steam, and organic Rankine cycle." *Energy Science & Engineering* 6, no. 5 (2018): 506-522.
- Gholami, Ali, Ahmad Hajinezhad, Fathollah Pourfayaz, and **Mohammad Hossein Ahmadi**. "The effect of hydrodynamic and ultrasonic cavitation on biodiesel production: An exergy analysis approach." *Energy* 160 (2018): 478-489.
- Maddah, Heydar, Reza Aghayari, Mojtaba Mirzaee, **Mohammad Hossein Ahmadi**, Milad Sadeghzadeh, and Ali J. Chamkha. "Factorial experimental design for the thermal performance of a double pipe heat exchanger using Al₂O₃-TiO₂ hybrid nanofluid." *International Communications in Heat and Mass Transfer* 97 (2018): 92-102.
- Dehghani Madvar, Mohammad, Mohammad Alhuyi Nazari, Jamal Tabe Arjmand, Alireza Aslani, Roghayeh Ghasempour, and **Mohammad Hossein Ahmadi**. "Analysis of stakeholder roles and the challenges of solar energy utilization in Iran." *International Journal of Low-Carbon Technologies* 13, no. 4 (2018): 438-451.
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- Mirzaei, Mojtaba, **Mohammad Hossein Ahmadi**, Mohammad Mobin, Mohammad Alhuyi Nazari, and Reza Alayi. "Energy, exergy and economics analysis of an ORC working with several fluids and utilizes smelting furnace gases as heat source." *Thermal Science and Engineering Progress* 5 (2018): 230-237.
- **Ahmadi, Mohammad Hossein**, Afshin Tatar, Mohammad Alhuyi Nazari, Roghayeh Ghasempour, Ali J. Chamkha, and Wei-Mon Yan. "Applicability of connectionist methods to predict thermal resistance of pulsating heat pipes with

ethanol by using neural networks." *International Journal of Heat and Mass Transfer* 126 (2018): 1079-1086.

- Loni, Reyhaneh, E. Askari Asli-Ardeh, B. Ghobadian, **M. H. Ahmadi**, and Evangelos Bellos. "GMDH modeling and experimental investigation of thermal performance enhancement of hemispherical cavity receiver using MWCNT/oil nanofluid." *Solar Energy* 171 (2018): 790-803.
- Nazari, Mohammad Alhuyi, **Mohammad H. Ahmadi**, Roghayeh Ghasempour, and Mohammad Behshad Shafii. "How to improve the thermal performance of pulsating heat pipes: A review on working fluid." *Renewable and Sustainable Energy Reviews* 91 (2018): 630-638.
- Nazari, Mohammad Alhuyi, **Mohammad H. Ahmadi**, Roghayeh Ghasempour, Mohammad Behshad Shafii, Omid Mahian, Soteris Kalogirou, and Somchai Wongwises. "A review on pulsating heat pipes: From solar to cryogenic applications." *Applied Energy* 222 (2018): 475-484.
- Jahangir, Mohammad Hossein, Mahyar Ghazvini, Fathollah Pourfayaz, and **Mohammad Hossein Ahmadi**. "A numerical study into effects of intermittent pump operation on thermal storage in unsaturated porous media." *Applied Thermal Engineering* 138 (2018): 110-121.
- **Ahmadi, Mohammad H.**, Mohammad-Ali Ahmadi, Emin Açıkkalp, Mohammad Alhuyi Nazari, Mohammad Arab Pour Yazdi, and Ravinder Kumar. "New thermodynamic analysis and optimization of performance of an irreversible diesel cycle." *Environmental Progress & Sustainable Energy* 37, no. 4 (2018): 1475-1490.
- Aghayari, Reza, Heydar Maddah, **Mohammad Hossein Ahmadi**, Wei-Mon Yan, and Nahid Ghasemi. "Measurement and Artificial Neural Network Modeling of Electrical Conductivity of CuO/Glycerol Nanofluids at Various Thermal and Concentration Conditions." *Energies* 11, no. 5 (2018): 1190.
- Ahmadi, Mohammad Hossein, Mohammad Alhuyi Nazari, Roghayeh Ghasempour, Heydar Madah, Mohammad Behshad Shafii, and Mohammad Ali Ahmadi. "Thermal conductivity ratio prediction of Al₂O₃/water nanofluid by applying connectionist methods." *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 541 (2018): 154-164.
- Nazari, Mohammad Alhuyi, Roghayeh Ghasempour, **Mohammad Hossein Ahmadi**, Gholamreza Heydarian, and Mohammad Behshad Shafii. "Experimental

investigation of graphene oxide nanofluid on heat transfer enhancement of pulsating heat pipe." *International Communications in Heat and Mass Transfer* 91 (2018): 90-94.

- Jahangir, Mohammad Hossein, Mahyar Ghazvini, Fathollah Pourfayaz, **Mohammad Hossein Ahmadi**, Mohsen Sharifpur, and Josua P. Meyer. "Numerical investigation into mutual effects of soil thermal and isothermal properties on heat and moisture transfer in unsaturated soil applied as thermal storage system." *Numerical Heat Transfer, Part A: Applications* 73, no. 7 (2018): 466-481.
- Mohammadi, Amin, **Mohammad Hossein Ahmadi**, Mokhtar Bidi, Mahyar Ghazvini, and Tingzhen Ming. "Exergy and economic analyses of replacing feedwater heaters in a Rankine cycle with parabolic trough collectors." *Energy Reports* 4 (2018): 243-251.
- **Ahmadi, Mohammad H.**, Mohammad-Ali Ahmadi, Emin Açikkalp, Mohammad Alhuyi Nazari, Mohammad Arab Pour Yazdi, and Ravinder Kumar. "New thermodynamic analysis and optimization of performance of an irreversible diesel cycle." *Environmental Progress & Sustainable Energy* 37, no. 4 (2018): 1475-1490.
- Hooshang, Mazdak, Somayeh Toghyani, Alibakhsh Kasaeian, Reza Askari Moghadam, and **Mohammad Hossein Ahmadi**. "Enhancing and multi-objective optimising of the performance of Stirling engine using third-order thermodynamic analysis." *International Journal of Ambient Energy* 39, no. 4 (2018): 382-391.
- Açikkalp, Emin, and **Mohammad H. Ahmadi**. "Performance analysis and ecological optimization of an irreversible quantum heat engine with spin-1/2 system." *Thermal Science and Engineering Progress* 5 (2018): 466-470.
- Nazemzadegan, Mohammad Reza, Alibakhsh Kasaeian, Somayeh Toghyani, **Mohammad Hossein Ahmadi**, R. Saidur, and Tingzhen Ming. "Multi-objective optimization in a finite time thermodynamic method for dish-Stirling by branch and bound method and MOPSO algorithm." *Frontiers in Energy* (2017): 1-17.
- Ghahremannezhad, Ali, Huijin Xu, Mohammad Alhuyi Nazari, **Mohammad Hossein Ahmadi**, and Kambiz Vafai. "Effect of porous substrates on thermohydraulic performance enhancement of double layer microchannel heat sinks." *International Journal of Heat and Mass Transfer* 131 (2019): 52-63.

- **Ahmadi MH**, Ghare Aghaj SS, Nazeri A. Prediction of power in solar Stirling heat engine by using neural network based on hybrid genetic algorithm and particle swarm optimization. *Neural Computing and Applications*. 2013, 22(6), pp 1141-1150
- **Mohammad H. Ahmadi**, Mohammad Ali Ahmadi, Roham Bayat, Milad Ashouri, Thermo-economic optimization of Stirling heat pump by using non-dominated sorting genetic algorithm, *Energy Conversion and Management, Volume 91, February 2015, Pages 315-322*
- Toghiani, S., A. Kasaeian, **M. H. Ahmadi**. 2014. "Multi objective Optimization of Stirling Engine Using Non-ideal Adiabatic Method." *Energy Conversion and Management* 80: 54–62.
- **Ahmadi MH.**, Mohammadi AH., Dehghani S. 2013. "Evaluation of the maximized power of a regenerative endoreversible Stirling cycle using the thermodynamic analysis." *Energy Conversion and Management*.76, 561–570.
- **Ahmadi, M. H.**, S. Dehghani, A. H. Mohammadi, M. Feidt, and Marco A. Barranco-Jimenez. 2013. "Optimal Design of a Solar Driven Heat Engine Based on Thermal and Thermoeconomic Criteria." *Energy Conversion and Management* 75: 635–642.
- **Ahmadi, M. H.**, H. Hosseinzade, H. Sayyaadi, A. H. Mohammadi, and F. Kimiaghalam. 2013. "Application of the Multi objective Optimization Method for Designing a Powered Stirling Heat Engine: Design with Maximized Power, Thermal Efficiency and Minimized Pressure Loss." *Renewable Energy* 60: 313–322.
- **Ahmadi MH**, Sayyaadi H, Mohammadi AH, Barranco-Jimenez MA. Thermoeconomic multi-objective optimization of solar dish-Stirling engine by implementing evolutionary algorithm. *Energy Convers Manage* 2013;73:370–80.
- Hoseyn Sayyaadi, **Mohammad Hossein Ahmadi**, and Saeed Dehghani (2014). "Optimal Design of a Solar-Driven Heat Engine Based on Thermal and Ecological Criteria." *J. Energy Eng.*, 10.1061/(ASCE)EY.1943-7897.0000191 , 04014012.
- **Ahmadi, M. H.**, H. Sayyaadi, S. Dehghani, and H. Hosseinzade. 2013. "Designing a Solar Powered Stirling Heat Engine Based on Multiple Criteria: Maximized Thermal Efficiency and Power." *Energy Conversion and Management* 75: 282–291.

- **Mohammad Hossein Ahmadi**, Mohammad Ali Ahmadi, Thermo-ecological analysis and optimization Performance of an irreversible three-heat-source absorption heat pump, *Energy Conversion and Management* (2015), 10.1016/j.enconman.2014.11.021
- **Mohammad Hossein Ahmadi**, Mohammad Ali Ahmadi, Thermodynamic analysis and evolutionary algorithm based on multi-objective optimization of performance of irreversible four-temperature-level absorption refrigeration, *Mechanics and Industry*, 2015, In Press
- **Mohammad Hosein Ahmadi**, Mohammad Ali Ahmadi, Thermodynamic analysis and optimization of an irreversible Ericsson cryogenic refrigerator cycle, *Energy Conversion and Management* (2015), 89C, pp. 147-155
- **Ahmadi MH**, Ahmadi MA, Mehrpooya M, Hosseinzade H, Feidt M. Thermodynamic and thermoeconomic analysis and optimization of performance of irreversible four-temperature-level absorption refrigeration. *Energy Convers Manage* 2014;88:1051–9.
- **Mohammad H. Ahmadi**, Mohammad Ali Ahmadi, Michel Feidt, Performance optimization of a solar-driven multi-step irreversible Brayton cycle based on a multi-objective genetic algorithm, *Oil & Gas Science and Technology*, DOI: 10.2516/ogst/2014028
- **Mohammad H. Ahmadi**, Mohammad Ali Ahmadi , Amir H. Mohammadi, Mehdi Mehrpooya , Michel Feidt, Multi - Objective Optimization of an Irreversible Stirling Cryogenic Refrigerator Cycle, *Energy Conversion and Management*, Volume 82, 2014, pp. 351-360.
- **Mohammad H. Ahmadi**, Mohammad Ali Ahmadi , Amir H. Mohammadi, Mehdi Mehrpooya , Michel Feidt, Thermodynamic optimization of Stirling heat pump based on multiple, *Energy Conversion and Management* (2014), 80, pp. 319-328.
- Amir Abdollahpour, **Mohammad H. Ahmadi**, Amir H. Mohammadi, Thermodynamic model to study a solar collector for its application to Stirling engines, *Energy Conversion and Management* 79 (2014) 666–673.
- Seyed Abbas Sadatsakkak, **Mohammad H. Ahmadi**, Roham Bayat, Seyed Mohsen Pourkiaei, Michel Feidt , Optimization density power and thermal efficiency of an endoreversible Braysson cycle by using non-dominated sorting genetic algorithm, *Energy Conversion and Management* 93 (2015) 31–39.

- **Mohammad Hossein Ahmadi**, Mohammad Ali Ahmadi, Mehdi Mehrpooya, Marc A. Rosen, Using GMDH Neural Networks to Model the Power and Torque of Stirling Engine, *Sustainability* 2015, 7, 2243-2255; doi:10.3390/su7022243
- Seyed Abbas Sadatsakkak, **Mohammad Hossein Ahmadi**, Mohammad Ali Ahmadi, Thermodynamic and thermo-economic analysis and optimization of an irreversible regenerative closed Brayton cycle, *Energy Conversion and Management* 94 (2015) 124–129.
- Ahmadi, Mohammad H., Mohammad Ali Ahmadi, Seyed Abbas Sadatsakkak, and Michel Feidt. "Connectionist intelligent model estimates output power and torque of stirling engine." *Renewable and Sustainable Energy Reviews* 50 (2015): 871-883.
- Ahmadi, Mohammad H., Mohammad Ali Ahmadi, and Seyed Abbas Sadatsakkak. "Thermodynamic analysis and performance optimization of irreversible Carnot refrigerator by using multi-objective evolutionary algorithms (MOEAs)." *Renewable and Sustainable Energy Reviews* 51 (2015): 1055-1070.
- Ashouri, Milad, Amin Mohammadi Khoshkar Vandani, Mehdi Mehrpooya, Mohammad H. Ahmadi, and Amir Abdollahpour. "Techno-economic assessment of a Kalina cycle driven by a parabolic Trough solar collector." *Energy Conversion and Management* 105 (2015): 1328-1339.
- Ahmadi, Mohammad Hossein, and Mehdi Mehrpooya. "Thermo-economic modeling and optimization of an irreversible solar-driven heat engine." *Energy Conversion and Management* 103 (2015): 616-622.
- Seyed Abbas Sadatsakkak, **Ahmadi, Mohammad H.**, Mohammad Ali Ahmadi, Optimization performance and thermodynamic analysis of an irreversible nano scale Brayton cycle operating with Maxwell–Boltzmann gas, *Energy Conversion and Management* 101 (2015) 592–605.
- **Ahmadi, Mohammad H.**, Mohammad-Ali Ahmadi, and Fathollah Pourfayaz. "Thermal models for analysis of performance of Stirling engine: A review." *Renewable and Sustainable Energy Reviews* 68 (2017): 168-184.
- Mohammadi, Amin, Alibakhsh Kasaeian, Fathollah Pourfayaz, and **Mohammad Hossein Ahmadi**. "Thermodynamic analysis of a combined gas turbine, ORC cycle and absorption refrigeration for a CCHP system." *Applied Thermal Engineering* 111 (2017): 397-406.

- Mohammadi, Amin, **Mohammad H. Ahmadi**, Mokhtar Bidi, Fatemeh Joda, Antonio Valero, and Sergio Uson. "Exergy analysis of a Combined Cooling, Heating and Power system integrated with wind turbine and compressed air energy storage system." *Energy Conversion and Management* 131 (2017): 69-78.
- Maleki, Akbar, Fathollah Pourfayaz, and **Mohammad Hossein Ahmadi**. "Design of a cost-effective wind/photovoltaic/hydrogen energy system for supplying a desalination unit by a heuristic approach." *Solar Energy* 139 (2016): 666-675.
- **Ahmadi, Mohammad H.**, Mehdi Mehrpooya, and Fathollah Pourfayaz. "Thermodynamic and exergy analysis and optimization of a transcritical CO₂ power cycle driven by geothermal energy with liquefied natural gas as its heat sink." *Applied Thermal Engineering* 109 (2016): 640-652.
- **Ahmadi, Mohammad H.**, Mohammad Ali Ahmadi, Fathollah Pourfayaz, Hadi Hosseinzade, Emin Acikkalp, Iskander Tlili, and Michel Feidt. "Designing a powered combined Otto and Stirling cycle power plant through multi-objective optimization approach." *Renewable and Sustainable Energy Reviews* 62 (2016): 585-595.
- **Ahmadi, Mohammad Hossein**, Amin Mohammadi, Fathollah Pourfayaz, Mehdi Mehrpooya, Mokhtar Bidi, Antonio Valero, and Sergio Uson. "Thermodynamic analysis and optimization of a waste heat recovery system for proton exchange membrane fuel cell using transcritical carbon dioxide cycle and cold energy of liquefied natural gas." *Journal of Natural Gas Science and Engineering* 34 (2016): 428-438.
- **Ahmadi, Mohammad H.**, Mohammad Ali Ahmadi, Fathollah Pourfayaz, and Mokhtar Bidi. "Entransy analysis and optimization of performance of nano-scale irreversible Otto cycle operating with Maxwell-Boltzmann ideal gas." *Chemical Physics Letters* 658 (2016): 293-302.
- **Ahmadi, Mohammad Hossein**, and Mohammad Ali Ahmadi. "Multi objective optimization of performance of three-heat-source irreversible refrigerators based algorithm NSGAI." *Renewable and Sustainable Energy Reviews* 60 (2016): 784-794.
- **Ahmadi, Mohammad H.**, Mehdi Mehrpooya, and Fathollah Pourfayaz. "Exergoeconomic analysis and multi objective optimization of performance of a

Carbon dioxide power cycle driven by geothermal energy with liquefied natural gas as its heat sink." *Energy Conversion and Management* 119 (2016): 422-434.

- **Ahmadi, Mohammad Hossein**, Mohammad Ali Ahmadi, Adel Mellit, Fathollah Pourfayaz, and Michel Feidt. "Thermodynamic analysis and multi objective optimization of performance of solar dish Stirling engine by the centrality of entransy and entropy generation." *International Journal of Electrical Power & Energy Systems* 78 (2016): 88-95.
- Ghalamchi, Mehran, Alibakhsh Kasaeian, **Mohammad Hossein Ahmadi**, and Mehrdad Ghalamchi. "Evolving ICA and HGAPSO algorithms for prediction of outlet temperatures of constructed solar chimney." *International Journal of Low-Carbon Technologies* (2016): ctw008.
- Ashouri, Milad, Fatemeh Razi Astarai, Roghaye Ghasempour, **Mohammad H. Ahmadi**, and Michel Feidt. "Optimum insulation thickness determination of a building wall using exergetic life cycle assessment." *Applied Thermal Engineering* (2016).
- Mohammadi, Amin, Mokhtar Bidi, and **Mohammad H. Ahmadi**. "Economic evaluation of different scenarios for gas turbine waste heat recovery to produce water and power." *International Journal of Ambient Energy* just-accepted (2016): 1-22.
- **Ahmadi, Mohammad H.**, Mohammad Ali Ahmadi, and Fathollah Pourfayaz. "Thermodynamic analysis and evolutionary algorithm based on multi-objective optimization performance of actual power generating thermal cycles." *Applied Thermal Engineering* 99 (2016): 996-1005.
- **Ahmadi, Mohammad H.**, Mohammad-Ali Ahmadi, Fathollah Pourfayaz, Mokhtar Bidi, and Emin Açıkkalp. "Multi-objective optimization and exergetic-sustainability of an irreversible nano scale Braysson cycle operating with Maxwell–Boltzmann gas." *Alexandria Engineering Journal* (2016).
- **Ahmadi, Mohammad H.**, Mohammad-Ali Ahmadi, Fathollah Pourfayaz, and Mokhtar Bidi. "Thermodynamic analysis and optimization for an irreversible heat pump working on reversed Brayton cycle." *Energy Conversion and Management* 110 (2016): 260-267.
- **Ahmadi, Mohammad H.**, Mohammad Ali Ahmadi, Fathollah Pourfayaz, Mokhtar Bidi, Hadi Hosseinzade, and Michel Feidt. "Optimization of powered Stirling heat

engine with finite speed thermodynamics." *Energy Conversion and Management* 108 (2016): 96-105.

- Vandani, Amin Mohammadi Khoshkar, Mokhtar Bidi, and **Mohammad Hossein Ahmadi**. "Energy, exergy and environmental analyses of a combined cycle power plant under part-load conditions." *Mechanics & Industry* 17, no. 6 (2016): 610.
- **Ahmadi, Mohammad H.**, Mohammad Ali Ahmadi, Milad Ashouri, F. Raziq Astarai, R. Ghasempour, and Fethi Aloui. "Prediction of performance of Stirling engine using least squares support machine technique." *Mechanics & Industry* 17, no. 5 (2016): 506.
- Kasaeian, Alibakhsh, Mehdi Mehrpooya, Mahsa Aghaie, and **Mohammad Hossein Ahmadi**. "Solar radiation prediction based on ICA and HGAPSO for Kuhin City, Iran." *Mechanics & Industry* 17, no. 5 (2016): 509.
- Sadatsakkak, Seyed Abbas, **Mohammad H. Ahmadi**, and Mohammad Ali Ahmadi. "Implementation of artificial neural-networks to model the performance parameters of Stirling engine." *Mechanics & Industry* 17, no. 3 (2016): 307.
- Ahmadi, Mohammad H., Mohammad-Ali Ahmadi, Mehdi Mehrpooya, Michel Feidt, and Marc A. Rosen. "Optimal design of an Otto cycle based on thermal criteria." *Mechanics & Industry* 17, no. 1 (2016): 111.
- Pourkiaei, Seyed Mohsen, **Mohammad Hossein Ahmadi**, and S. Mahmoud Hasheminejad. "Modeling and experimental verification of a 25W fabricated PEM fuel cell by parametric and GMDH-type neural network." *Mechanics & Industry* 17, no. 1 (2016): 105.
- Shamshegaran, S. Reza, M. Ameri, M. Khalaji, and **M. Hossein Ahmadi**. "Design and optimization of a compressed air energy storage (CAES) power plant by implementing genetic algorithm." *Mechanics & Industry* 17, no. 1 (2016): 109.
- Naseri, Ali, Mokhtar Bidi, **Mohammad H. Ahmadi**, and R. Saidur. "Exergy analysis of a hydrogen and water production process by a solar-driven transcritical CO₂ power cycle with Stirling engine." *Journal of Cleaner Production* 158 (2017): 165-181.
- Naseri, Ali, Mokhtar Bidi, and **Mohammad H. Ahmadi**. "Thermodynamic and exergy analysis of a hydrogen and permeate water production process by a solar-driven transcritical CO₂ power cycle with liquefied natural gas heat sink." *Renewable Energy* (2017).

- **Ahmadi, Mohammad H.**, Mohammad Amin Nabakhteh, Mohammad-Ali Ahmadi, Fathollah Pourfayaz, and Mokhtar Bidi. "Investigation and optimization of performance of nano-scale Stirling refrigerator using working fluid as Maxwell–Boltzmann gases." *Physica A: Statistical Mechanics and its Applications* 483 (2017): 337-350.
- **Ahmadi, Mohammad H.**, Mohammad-Ali Ahmadi, Akbar Maleki, Fathollah Pourfayaz, Mokhtar Bidi, and Emin Açıkkalp. "Exergetic sustainability evaluation and multi-objective optimization of performance of an irreversible nanoscale Stirling refrigeration cycle operating with Maxwell–Boltzmann gas." *Renewable and Sustainable Energy Reviews* 78 (2017): 80-92.

International Conferences:

- **Mohammad Hossein Ahmadi**, Mohammad Ali Ahmadi, Performance Optimization of Three-Heat-Source Irreversible Refrigerators Based Algorithm NSGAI, Presented at *1st International Electronic Conference on Entropy and Its Applications (3 - 21 November 2014)*
- **Mohammad Hossein Ahmadi**, Mohammad Ali Ahmadi, Milad Ashuri, Optimization Performance of Irreversible Refrigerators Based on Evolutionary Algorithm, Presented at *1st International Electronic Conference on Entropy and Its Applications (3 - 21 November 2014)*
- **Mohammad Hossein Ahmadi**, Mohammad Ali Ahmadi, Adel Mellit, Michel Feidt, Thermodynamic Analysis and Multi Objective Optimization of Performance of Solar Dish Stirling Engine by the Centrality of Entropy and Entropy Generation, Presented at *1st International Electronic Conference on Entropy and Its Applications (3 - 21 November 2014)*
- **Mohammad Hossein Ahmadi**, Mehdi Mehrpooya, Marc A. Rosen, Mohammad Ali Ahmadi, Using GMDH Neural Networks to Model the Power and Torque of Stirling Engine, Presented at *The 4th World Sustainability Forum (1 - 30 November 2014)*

- Ataei, A.; Alizadeh, M.; Ali Ehyaei, M.; **Ahmadi, M.H**, Energy Analysis of Supercritical Water and Ammonia (Kalina) Power Cycle. *In Proceedings of the 4th World Sustain. Forum*, 1 - 30 November 2014; Sciforum Electronic Conference Series, Vol. 4, 2014 , e001; doi:10.3390/wsf-4-e001
- Heibati, S.; Atabi, F.; Khalaji Assadi, M.; Ali Ehyaei, M.; **Ahmadi, M.H**, Economic and Environmental Assessments of Energy Conservation in Residential Building to meet the Electrical, Heating and Cooling Loads with Micro Gas Turbine Units. *In Proceedings of the 4th World Sustain. Forum*, 1 - 30 November 2014; Sciforum Electronic Conference Series, Vol. 4, 2014 , e005; doi:10.3390/wsf-4-e005
- Atabi, F.; Ali Ehyaei, M.; **Ahmadi, M.H**, Calculation of CH₄ and CO₂ Emission Rate in Kahrizak Landfill Site with Land GEM Mathematical Model. *In Proceedings of the 4th World Sustain. Forum*, 1 - 30 November 2014; Sciforum Electronic Conference Series, Vol. 4, 2014 , e006; doi:10.3390/wsf-4-e006
- Ali Ehyaei, M.; Rosen, M.; **Ahmadi, M.H**, Meeting the Electrical Energy Needs of a Residential Building with a Wind-Photovoltaic Hybrid System. *In Proceedings of the 4th World Sustain. Forum*, 1 - 30 November 2014; Sciforum Electronic Conference Series, Vol. 4, 2014 , e008; doi:10.3390/wsf-4-e008
- Ashuri, M.; **Ahmadi, M.H**; Feidt, M. Performance Analysis of Organic Rankine Cycle Integrated with a Parabolic Through Solar Collector. *In Proceedings of the 4th World Sustain. Forum*, 1 - 30 November 2014; Sciforum Electronic Conference Series, Vol. 4, 2014 , e014; doi:10.3390/wsf-4-e014
- Sameti, M.; **Ahmadi, M.H**; Feidt, M. Optimum Annual Electricity Cost Through On-Site Renewable Energy Generation and V2H Technology. *In Proceedings of the 4th World Sustain. Forum*, 1 - 30 November 2014; Sciforum Electronic Conference Series, Vol. 4, 2014 , e015; doi:10.3390/wsf-4-e015

National Journals:

- **Ahmadi MH**, Mohammadi AH, Pourkiaei SM. Optimisation of the thermodynamic performance of the Stirling engine. *Int J Ambient Energy* 2014. <http://dx.doi.org/10.1080/01430750.2014.907211>.

- **Mohammad Hossein Ahmadi**, Mohammad Ali Ahmadi, Thermodynamic analysis and evolutionary algorithm based on multi-objective optimization of Rankine cycle heat engine, *International Journal of Ambient Energy*, 2015, In Press
- **Mohammad Hossein Ahmadi**, Mohammad Ali Ahmadi, Investigation of Design Parameters Effect on Power output and Thermal Efficiency of the Stirling Engine Thermodynamic Analysis, *International Journal of Low-Carbon Technologies*, 10.1093/ijlct/ctu030
- SS Bahari, M Sameti, **MH Ahmadi**, MS Haghgooyan, Optimization of a Combined Stirling Cycle-Organic Rankine Cycle using a Genetic Algorithm, *International Journal of Ambient Energy*, 2015, In Press.
- **MH Ahmadi**, M Mehrpooya, N Khalilpoor, Artificial Neural-Networks modeling of the Performance Parameters of Stirling Engine, *International Journal of Ambient Energy*, 2015, In Press..
- **Mohammad H. Ahmadi**, Mehdi Mehrpooya, S. Mohsen Pourkiaei, Michel Feidt, Mohammad Sameti, Thermodynamic optimisation of irreversible refrigerators base on NSGAI, *Int. J. Renewable Energy Technology*, 2015, In Press.

RESEARCH INTEREST:

- Sustainable Energy,
- Renewable Energy
- Thermal engineering
- Carbon capture
- Biofuel
- Environmental Engineering
- Application of nano technology in Energy engineering
- Application of Artificial Intelligence in Energy engineering

LANGUEGE PROFISIENCY:

- **English:** Fluent in writing, speaking and verbal skills
- **Persian:** Native Language

- **Arabian:** Fluent in Reading and Writing

COMPUTER SKILLS:

- Soft wares: **HYSYS, Thermoflow ,EES, Energyplan**
- General soft wares : **Office Software Package, MATALB**

<https://www.scopus.com/authid/detail.uri?authorId=55016898100&origin=cto>

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